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Paul Andrew Evans

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EXAMINER

HUYNH, KHOA B

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/567,734	<b>Applicant(s)</b> EVANS, PAUL ANDREW	
	<b>Examiner</b> KHOA HUYNH	<b>Art Unit</b> 2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 February 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>02/07/06</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities:
  - a. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
  - b. The specification is not divided into sections.

Appropriate correction is required.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

### *Drawings*

3. The drawings 1-2 are objected to under 37 CFR 1.83(a) because **they fail to show descriptive textual label for each numbered element as described in the specification**. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes

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made to the brief description of the several views of the drawings for consistency.

Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121 (d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1-3, 6-10, 13-15** are rejected under 35 U.S.C. 102(b) as being anticipated by **Datta, US 2003/0031180**.

7. **For claim 1**. Datta teaches: A method of sending data over a communications network (**Datta, fig 3, data are sent over the communication network depicted from node 306 to node 330**), the method comprising the steps of

(a) an originating terminal generating a request for a content server (**Datta, fig 3, node 306 generates a request for content from node 330; Datta, page 12, paragraph**

**68**, *"In one embodiment, the controller 202 includes the components 402, 406, 412 and at least one network 106 client which generates at least one SYN request which the SYN modifier 412 modifies"*);

(b) the originating terminal dividing the request into a plurality of packets (**Datta, fig 3**, controller 308 divides the request into plurality of packets and distribute them to routers 310, 312, 314; even though the controller 308 is illustrated as a separate entity from node 306, according to page 12, paragraph 61, controller 308 can be implemented as a software on node 306; **Datta, page 19, paragraph 88**, *"the invention divides requests (from the clients to a server on the Internet) over multiple paths. This includes multiple paths for single requests from applications like an HTTP URL request, FTP data transfer and also individual requests over individual router"*; there is no direct correlation between IP packets and individual requests--a request may be split across multiple packets, and a packet may contain more than one request);

(c) the originating terminal distributing the plurality of packets to a first plurality of terminals over a first network (**Datta, fig 3**, packets are distributed over plurality of routers 310, 312, 314 in the first network)

(d) the first plurality of terminals transmitting packets received during step (c) to a reconstitution server located in a second network (**Datta, fig 3**, plurality of routers 310, 312, 314 transmit packets to controller 328 in the second network which is capable of restore/reconstitute the packets; **Datta, page 5, paragraph 55**, *"At the receiving LAN 304, the data stream is recombined in an orderly manner. That is, the sequence of the original data transfer from the source 302 is restored, either by the controller 328 or by*

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*destination networking software which relies on conventional data packet numbers created by the source networking software”)*

the first plurality of terminals being connected to the second network by a second plurality of connections (**Datta, fig 3**, *plurality of routers 310, 312, 314 are connected to the second network by plurality of routers 324, 326 through a plurality of connections*);

(e) the reconstitution server receiving the plurality of packets and sending the plurality of packets to the content server (**Datta, fig 3**, *controller 308 receives the packets and sends them to node 330*).

8. **For claim 2.** Datta teaches: A method according to claim 1, comprising the further steps of:

(f) the content server sending content data to the reconstitution server in response to the request received in step (e), (**Datta, fig 3, node 330** *send packets back to controller 328 in response to the request; Datta, page 3, paragraph 25, "The request reaches the destination resource and the destination generates a response. The response from the Internet comes back to the router, which sends it back to the controller computer, which in turn sends it to the user on the LAN"*)

the data being sent as a plurality of content data packets (**Datta, page 3, paragraph 26**, *"the responses to these requests also come back through multiple routers"*; **Datta, page 13, paragraph 78**, *"Note that there may be multiple responses from the LAN server to a single request, as when a web page references various images that are sent in separate responses"*)

(g) the reconstitution server distributing the plurality of content data packets to the first plurality of terminals over the second plurality of connections (**Datta, fig 3, controller 328 distributes packets to routers 324, 326 which are subsequently connected to routers 310, 312, 314**);

(h) the first plurality of terminals sending the plurality of content data packets to the originating terminal (**Datta, fig 3, routers 310, 312, 314 send the data packets to node 306**);

and (i) the originating terminal receiving the plurality of content data packets to re-create the content data (**Datta, fig 3, controller 308 receives the data packets and recreate the content data; even though the controller 308 is illustrated as a separate entity from node 306, according to page 12, paragraph 61, controller 308 can be implemented as a software on node 306; Datta, page 3, paragraph 27, "The data stream is multiplexed over several routers going out of the first LAN, and then at the receiving LAN the data stream is recombined to restore the sequence of the original data transfer"**) .

9. **For claim 3.** Datta teaches: A method according to claim 2, wherein in step (c) and/or step (g), the plurality of packets are distributed to the first plurality of terminals in a round-robin basis (**Datta, page 19, paragraph 84, "The router selector 406 selects between identified routers 110 using load balancing, a round-robin approach, or another algorithm which increases concurrent operation of identified routers 110"; packets are distributed to plurality of routers 110 using round-robin approach**).

10. **For claim 6.** Datta teaches: A communications network (**Datta, fig 3**, data are sent over the communication network depicted from node 306 to node 330) comprising;  
a first plurality of terminals (**Datta, fig 3**, plurality of routers 310, 312, 314 and nodes 102s and controller 308),

the terminals being connected by a first network and having a second plurality of connections to a second network (**Datta, fig 3**, plurality of routers 310, 312, 314 and nodes 102s and controller 308 are connected together in the first network which have plurality of connections to routers 324, 326 in the second network),

the second network comprising a reconstitution server and a plurality of content servers (Datta, fig 3, second network comprises controller 328 which is capable of restore/reconstitute packets and plurality of nodes 102 which are capable of serving content),

wherein, in use, an originating terminal generates a request for one of the content servers (**Datta, fig 3**, node 306 generates a request for content from node 330; **Datta, page 12, paragraph 68**, "In one embodiment, the controller 202 includes the components 402, 406, 412 and at least one network 106 client which generates at least one SYN request which the SYN modifier 412 modifies"),

divides the request into a plurality of packets (**Datta, fig 3**, controller 308 divides the request into plurality of packets and distribute them to routers 310, 312, 314; even though the controller 308 is illustrated as a separate entity from node 306, according to page 12, paragraph 61, controller 308 can be implemented as a software on node 306;



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**Datta, page 19, paragraph 88**, “the invention divides requests (from the clients to a server on the Internet) over multiple paths. This includes multiple paths for single requests from applications like an HTTP URL request, FTP data transfer and also individual requests over individual router”; there is no direct correlation between IP packets and individual requests--a request may be split across multiple packets, and a packet may contain more than one request)

and distributes the plurality of packets between the first plurality of terminals via the first network (**Datta, fig 3**, packets are distributed over plurality of routers 310, 312, 314 in the first network),

the plurality of packets are sent to the reconstitution server via the second plurality of connections (**Datta, fig 3**, plurality of routers 310, 312, 314 transmit packets to controller 328 in the second network which is capable of restore/reconstitute the packets; **Datta, fig 3**, plurality of routers 310, 312, 314 are connected to the second network by plurality of routers 324, 326 through a plurality of connections; **Datta, page 5, paragraph 55**, “At the receiving LAN 304, the data stream is recombined in an orderly manner. That is, the sequence of the original data transfer from the source 302 is restored, either by the controller 328 or by destination networking software which relies on conventional data packet numbers created by the source networking software”),

the reconstitution server sending the plurality of packets to the content server (**Datta, fig 3**, controller 308 receives the packets and sends them to node 330).

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11. **For claim 7.** Datta teaches: A communications network according to claim 6, wherein, in use,

the content server sends content data to the reconstitution server in the form of a plurality of content data packets (**Datta, fig 3, node 330** send content data packets back to controller 328 in response to the request; **Datta, page 3, paragraph 25**, "The request reaches the destination resource and the destination generates a response. The response from the Internet comes back to the router, which sends it back to the controller computer, which in turn sends it to the user on the LAN"),

the reconstitution server distributes the plurality of content data packets between the first plurality of terminals over the second plurality of connections (**Datta, fig 3**, controller 328 distributes packets to routers 324, 326 which are subsequently connected to routers 310, 312, 314),

the first plurality of terminals distributing the plurality of content data packets to the originating terminal (**Datta, fig 3**, routers 310, 312, 314 send the data packets to node 306);

the originating terminal receiving the plurality of content data packets and re-creating the content data (**Datta, fig 3**, controller 308 receives the data packets and recreate the content data; even though the controller 308 is illustrated as a separate entity from node 306, according to page 12, paragraph 61, controller 308 can be implemented as a software on node 306; **Datta, page 3, paragraph 27**, "The data stream is multiplexed over several routers going out of the first LAN, and then at the

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*receiving LAN the data stream is recombined to restore the sequence of the original data transfer”).*

12. **For claim 8.** Datta teaches: A communications network according to claim 6, wherein the first plurality of terminals is greater than the second plurality of connections (**Datta, fig 3**, *if the terminals in the top network are considered as “first” then first plurality of terminals is greater than the second plurality of connections*).

13. **For claim 9.** Datta teaches: A communications network according to claim 6, wherein the first plurality of terminals is less than the second plurality of connections (**Datta, fig 3**, *if the terminals in the bottom network are considered as “first” then first plurality of terminals is less than the second plurality of connections*).

14. **For claim 10.** Datta teaches: A communications network according to claim 6, wherein each of the first plurality of terminals comprises a list identifying the other active terminals (**Datta, fig 4**, *controller 202 contains router identifiers 402, 404 which is a list that identifies other active terminals, according to page 12, paragraph 61, controller 202 can be implemented as a software on all terminals; Datta, page 5, paragraph 60, “The router identifications 404 include an active list of mapped port numbers and the address of the router 110 on which the connection to the port was created”*).

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15. **For claim 13.** Datta teaches: A reconstitution server (**Datta, fig 3, controller 328 is capable of restore/reconstitute packets**), the server, in use, receiving a plurality of packets from a first plurality of terminals and sending the plurality of packets to a content server identified by a request (**Datta, fig 3, controller 328 receives plurality of packets from routers 324, 326 which are connected to routers 310, 312, 314 and send the packets to node 330 to serve content request by node 306**);

16. **For claim 14.** Datta teaches: A reconstitution server according to claim 13, the server, in use, receiving a plurality of content data packets from a content server in response to the request (**Datta, fig 3, node 330 send packets back to controller 328 in response to the request; Datta, page 3, paragraph 25, "The request reaches the destination resource and the destination generates a response. The response from the Internet comes back to the router, which sends it back to the controller computer, which in turn sends it to the user on the LAN"**) and distributing the plurality of content data packets between the first plurality of terminals (**Datta, fig 3, controller 328 distributes packets to routers 324, 326 which are subsequently connected to routers 310, 312, 314**);

17. **For claim 15.** Datta teaches: A reconstitution server according to claim 13, wherein the reconstitution server is in communication with the first plurality of terminals via a second plurality of connections (**Datta, fig 3, controller 328 is in communication with routers 310, 312, 314 using plurality of connections through routers 324, 326**).

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***Claim Rejections - 35 USC § 103***

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

20. **Claims 4, 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Datta, US 2003/0031180** in view of **Gray, US 6,178,448**.

21. **For claim 4**. Datta teaches: A method according to claim 3,

Datta doesn't teach: wherein the round-robin distribution of the plurality of packets is weighted.

Gray from the same or similar fields of endeavor teaches: the round-robin distribution of the plurality of packets is weighted (**Gray, column 3, lines 39-42**, "This

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*distribution of packets among the concurrent links is presently accomplished in a number of ways, including round-robin, weighted round-robin and link metered pacing approaches”)*

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to includes Gray’s weighted round-robin distribution in Datta’s technique of distributing packets since it “In the context of the present invention, any suitable load balancing or load sharing algorithm can be used by the router selector 406” (**Datta, page 12, paragraph 64**) and “This distribution of packets among the concurrent links is presently accomplished in a number of ways, including round-robin, weighted round-robin and link metered pacing approaches” (**Gray, column 3, lines 39-42**). This method of improving Datta’s technique of distributing packets was within the ordinary ability of one of ordinary skill in the art based on the teaching of Gray. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Datta and Gray to obtain the invention.

22. **For claim 5.** Datta and Gray teach: A method according to claim 4,

Gray further teaches: whereon the round-robin weighting is determined in accordance with the bandwidth of the connection between the terminal and the second network (**Gray, column 4, lines 20-22**, “The weight values typically are based on link speeds and provide a simple way to load balance the flow over the sublinks”; link speeds is bandwidth)

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23. **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Datta, US 2003/0031180** in view of **Barron, US 2002/0152414**.

24. **For claim 11**. Datta teaches: A communications network according to claim 10, wherein, in use,

Datta doesn't teach: each active terminal periodically sends a first status message to the other terminals to indicate that it is active.

Barron from the same or similar fields of endeavor teaches: each active terminal periodically sends a first status message to the other terminals to indicate that it is active (**Barron, page 1, paragraph 4**, "A current method for quorum validation, i.e. the process of verifying that the cluster members are still present, is to send messages (called "heartbeats") to other nodes to obtain mutual consent on the agreed upon list of cluster members. These heartbeats include both substantive messages sent by a node, and other messages which simply indicate that the sending node is still connected to the network and functioning correctly"; heartbeats message are periodically send to other terminals to indicate that the sending node is still connected to the network)

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to includes Barron's heartbeat messages in Datta's communication network since "A key necessity in cluster operations is to coordinate the operation of the members of the cluster. One very fundamental element of this is that each member of a cluster needs to know whether the cluster is still operating, and if so who the other

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members of the cluster are. This basic need is referred to as "quorum validation."

**(Barron, page 1, paragraph 3).** This method of improving Datta's communication network was within the ordinary ability of one of ordinary skill in the art based on the teaching of Barron. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Datta and Barron to obtain the invention.

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25. **Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Datta, US 2003/0031180** in view of **Zhao, US 2004/0224694**.

26. **For claim 12.** Datta teaches: A communications network according to claim 10,

27. Datta doesn't teach: wherein an active terminal sends a second status message to the other terminals prior to becoming inactive.

28. Zhao from the same or similar fields of endeavor teaches: wherein an active terminal sends a second status message to the other terminals prior to becoming inactive (**Zhao, page 4, paragraph 56**, "*When the wireless data device 10 powers down, it notifies its data inactive status by sending a Data Inactive Messages 66A and 66B to push servers 52 and 54 respectively*")

29. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to includes Zhao's data inactive messages in Datta's communication network since "These messages are used to indicate whether the wireless data device 10 will accept data using the Data Active Notification 68, or will not accept data using



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the Data Inactive Notification 72" (***Zhao, page 3, paragraph 41***). This method of improving Datta's communication network was within the ordinary ability of one of ordinary skill in the art based on the teaching of Zhao. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Datta and Zhao to obtain the invention.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHOA HUYNH whose telephone number is (571) 270-7185. The examiner can normally be reached on Monday - Thursday: 7:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SEEMA RAO can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Supervisory Patent Examiner, Art  
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